

Managing Insect Pests in the Home Vegetable Garden

There are a number of mechanical and/or cultural practices that may be used to help reduce insect pests in home vegetable gardens. Some are more practical than others, and the success will depend in part on your willingness to work at them. An integrated approach to pest management (combining a number of strategies) is often best.

One of the most important strategies in dealing with insects is to learn about them - which ones are pests, learn about the habitat they live in, their life cycle, what they will feed on and a little about their behavior. This information will help you decide what to do. Many insects found in the garden are not pests, and some will be beneficials.

1. Maintain vigorous, healthy plants -- there is some evidence to suggest that plants growing under stressful conditions are more likely to be attacked and to suffer serious damage. Fertilization, liming, too little or too much water, and planting too close together can all adversely affect plants. **Check the fertility and pH** of soil regularly and make adjustments as needed. **Thin plants** to the recommended spacing.
2. Planting the same crop in the same place year after year may cause pest buildup. **Rotate** crops, especially where soil insects such as grubs, wireworms and maggots are a problem. Do not plant crops susceptible to grubs or wireworms where grass grew the previous year.
3. Choose **recommended varieties** for your area, and where available, resistant varieties to pests known to occur in your area. An example -- butternut squash is listed as being resistant to the squash vine borer. Go to [Selected List of Vegetable Varieties for Home Garden Use in New York](#) or contact Cornell Cooperative Extension for more information.
4. **Sanitation** in and around the garden is very important. Many vegetable pests overwinter in weeds or plant debris in or near the garden. **Remove weeds** and/or organic mulches, which can provide ideal places for insects, slugs and snails to reside. Where mulches cannot be removed, at least collect and destroy the pests before setting out transplants or sowing seed.
5. **Avoid bringing insect infested plants into the garden.** Carefully check transplants for the presence of insects before purchasing and planting.
6. **Consider time of planting** -- could the pest be avoided by earlier or later planting?
7. **Handpicking** -- removing the pest by taking them off the plants and destroying them. Placing them in a bucket of soapy water may kill insects.
8. **Physical barriers** placed around plants can control some insects. Included here would be such things as:
 - a) **Cardboard collars** (or roofing paper), four inches high, placed around young transplants to prevent cutworms from cutting the stems, and squares of tar paper or carpeting placed securely around the stems of young cabbage family crops to prevent the cabbage maggot fly from depositing eggs at the base of the plants.
 - b) **Row covers** placed over plants until either the pest is gone or the plants are large enough to need the covers removed. All covers should be removed about four to six weeks into the season as temperatures during mid summer get too hot. Some plants need to be insect pollinated or they

will not yield a crop such as cucumbers, melons and squash. There are commercial polypropylene, polyester and polyvinyl alcohol covers available, but cheesecloth or screening can also be used. All of these let in light and water and allow continued plant growth. Even ventilated plastic row covers help to keep out many pests.

9. **Mulches** some research has shown that certain mulching materials such as aluminum foil may repel aphids, thrips and other insects. Although this material is expensive, it may be practical on the small scale.
10. **Traps** such as yellow sticky boards can be used to help monitor insect populations, but they are seldom sufficient to give control. They do help, however, to maintain whitefly populations at a low level as long as sticky material is replaced periodically when insects cover the boards.
11. **Biological control** by the introduction of predators, parasites or diseases is becoming more practical as we learn more about managing the pest system. Remember when introducing or maintaining predators or parasites, if there are insufficient hosts for them to feed on, the beneficials will move elsewhere.
12. **Pesticides** may also be used as a part of the pest management program. Be sure to use only the amount you need, and to treat only the crops that need treating. Spot treatments are effective and may be practical for home gardens. Before using any pesticide check the label the crop you want to treat, and the pest you are treating must both be listed on the label. If not, do not use the pesticide.

It is important to note that just because a **pesticide** may be **botanical** in origin, it does not mean that it is non-toxic. Some botanical insecticides are more toxic than some of the commonly available synthetic chemicals.

- a) **Biorational pesticides**, such as *Bacillus thuringiensis* (*B.t.*), a bacterium that attacks caterpillars, are an alternative to some chemical pesticides.
- b) **Insecticidal soaps** are also an alternative to some chemical pesticides and may be useful for certain pests, especially aphids, in the home garden.
- c) **Diatomaceous earth**, a desiccant is sometimes used for control of insects, slugs and snails. Once it gets wet and compacted, however, it loses effectiveness.

No matter which methods you choose, try to keep a record of what you did and whether it was successful. Such a record should be a great help in the future when you are faced with similar pest management decisions.

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The New York State Department of Environmental Conservation (NYSDEC) Bureau of Pest Management maintains a web site with a searchable database for pesticide products currently registered in New York State. Individuals who have Internet access can locate currently registered products containing at <http://www.dec.ny.gov/nyspad/products?0>.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. READ THE LABEL BEFORE APPLYING ANY PESTICIDE.

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